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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

REESE, DAVID C

ART UNIT PAPER NUMBER

3677

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/752,431

Applicant(s)

BAER ET AL.

Examiner

David C. Reese

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3, 5-9 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/2/2006 has been entered. Consequently, the following is the current listing of claims in the instant application:

***Status of Claims***

- Claim 4 is canceled.
- Claim 1 was amended (5/27/2005).
- Claims 1-3 and 5-9 are pending.

***Claim Rejections - 35 USC § 112***

[1] Applicant has addressed all rejections under 35 USC § 112 to the Claims in the amendment filed 12/27/2005. Accordingly, the Examiner has withdrawn the 35 USC § 112 rejections.

***Claim Rejections - 35 USC § 103***

[2] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3677

[3] Claims 1, 3, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US- 6,666,638, in view of Chen US-6,254,327, and even further in view of Linsey, US-112,935.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 1, Craven teaches of a fastener (300 in Fig. 14) for composite material comprising:

a shaft (363, 353) having a longitudinal axis,

an undercut head at a first end of the shaft (170 and below in Fig. 5, and from col. 6, line 6, "...the remnants 80 that are cut or extruded from the remnant-producing material 82 may also be captured by the lower neck portion 174, the upper neck portion 172, and the land area 190").

a point (340) at the other end of the shaft (end of 353),

a first portion of the shaft (353) adjacent the point (340) being threaded (354), and extending over a portion of the total length of the shaft (363,353),

a second portion of the shaft (363) adjacent the head not being threaded, said second portion having a plurality of spaced rings (394), the spaced rings (394) reducing the mushrooming of the composite material when the fastener is used in the composite material (from col. 7, beginning with lines 9, "screw captures the remnants that have been extruded onto the surface of the remnant-product material. In use, remnants 80 that are

Art Unit: 3677

shaved, cut, or otherwise pushed to the surface 83 of the remnant-producing material 82 are captured by the threads 264 of the upper threaded portion 260. Refer now to Fig. 14 that shows a screw...according to another embodiment of the present invention.”)

The differences between the claim and Craven are the following: the threads (354) having three radial lobes; and the head having an undercut edge which is inverted in a circular arc towards the head, the undercut edge being furthest from a top surface of the head at an outside portion of the head furthestmost from the longitudinal axis, the undercut edge being closer to the top surface between the outside portion and the longitudinal axis. With regard to the former of the two issues above, Chen discloses a fastener similar to that of Craven. In addition, Chen further teaches of a shank with a lower portion formed with spiral triangular threads (see figure 4) with three sharp edges and three pointed tips. It would have been obvious to one of ordinary skill in the art, having the disclosures of Craven and Chen before him at the time the invention was made, to modify the first portion of the shaft adjacent the point being threaded of Craven to include three radial lobes, as in Chen. One would have been motivated to make such a combination because such a configuration of thread structure allows for a screw which can be easily turned into a material such as a piece of hard wood, as taught by Chen in col. 2, beginning with line 24.

With regard to the latter of the two issues above (...head having an undercut edge...) Linsey discloses a fastener similar to that of Craven in view of Chen. In addition, Linsey further teaches of a head (B) at a first end of a shaft, the head (B) having an undercut edge (a) which is inverted in a circular arc towards the head (B), the undercut edge (a) being furthest from a top surface of the head at an outside portion of the head

Art Unit: 3677

(rightmost part of a), furthestmost from the longitudinal axis, the undercut edge (a) being closer to the top surface between the outside portion (inside middle of a) the longitudinal axis. It would have been obvious to one of ordinary skill in the art, having the disclosures of Craven, Chen, and Linsey before him at the time the invention was made, to modify the head to incorporate an undercut, as in Linsey. One would have been motivated to make such a combination because such a feature prevents the head from pressing the fibers apart and splitting a material, the remainder being left flat and smooth, without the trouble of countersinking, thus providing an example of a self-countersinking head. Examiner also encourages the applicant to review the following, helping to depict that such a feature is extremely well known in the art of fasteners. Dekker, 3,903,784 (Figs. 5 and 7); Place, 2,895,368 (Fig. 1 and 4); Peterka et al, 2,056,688 (Figs. 1,5,8,12); Hobbs, 2,982,166; Maclean, 1,955,924; Twedell, 1,827,628; Campbell et al., 1,820,556; Rich et al., 4,310,272.

Re: Claim 3, Craven discloses wherein said first portion (353) has asymmetrical threads (thread at 340 compared to the thread at 356 in Fig. 14).

Re: Claim 7, Craven discloses comprising three said rings, wherein said rings are equally spaced with respect to each other (390 and the two rings below in Fig. 14).

[5] Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US- 6,666,638, in view of Chen US-6,254,327, and further in view of DeHaitre US-5,516,248.

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the

Art Unit: 3677

prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 2, Craven in view of Chen teaches of that from Claim 1, including a shaft with both a first and second portion.

The difference between the claim and Craven in view of Chen is the claim recites: comprising a knurled portion between said first and second portions. DeHaitre discloses a fastener similar to that of Craven in view of Chen. In addition, DeHaitre further teaches of a knurled section (18) between both a first (16) and second (10) position of a shaft. It would have been obvious to one of ordinary skill in the art, having the disclosures of Craven in view of Chen and DeHaitre before him at the time the invention was made, to modify the fastener of Craven in view of Chen to include a knurled section between both the threaded first portion and the second portion as in DeHaitre. One would have been motivated to make such a combination to help reduce installation time and increase the drive tool life since the knurled section, as stated in col. 6, beginning with line 4, "cuts away fibers which would otherwise engage the screw shank and thereby reduce frictional resistance with resulting optimization of driver torque in driving the screw into the workpieces and seating the head beneath the work surface" as taught by DeHaitre.

Re: Claim 9, DeHaitre discloses comprising a shank slot adjacent said point (42 in Fig. 1, motivation of which can be found in col. 5 of DeHaitre, beginning with line 44).

[6] Claims 5-6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craven, US- 6,666,638, in view of Chen US-6,254,327, and further in view of case law.

Art Unit: 3677

Although the invention is not identically disclosed or described as set forth 35 U.S.C. 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a designer having ordinary skill in the art to which said subject matter pertains, the invention is not patentable.

As for Claim 5, Craven in view of Chen teaches:

It would have been an obvious matter of art recognized equivalence to have the rings unequally spaced with respect to each other, as Applicant has not disclosed that it solves any stated problem of the prior art (that is, the applicant has not discussed how the unequal placement of the spaced rings will solve a different problem than that of equally spaced rings such as that of Craven; as applicant even submits an embodiment that incorporates an version where the rings are equally spaced between one another) or is for any particular purpose. It appears that the invention would perform equally well as the invention disclosed by Craven. In addition, it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. See also, *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). This specific reasoning can also be applied to that stated in Claims 6 and 8.

Re: Claim 6 (see above).

Re: Claim 8 (see above).

### ***Response to Arguments***

[7] Applicant's arguments as well as the declaration filed by Michael Tipps filed on 5/2/2006 regarding rejections under 35 U.S.C. 103 have been fully considered but they



Art Unit: 3677

are not persuasive. Michael Tipps' declaration presented information showing how the composite screw of the instant invention evidently works over commercially available fasteners by providing evidence of non-obviousness, unexpected results and commercial success. The examiner is not persuaded in this case because the current listing of claims for the instant invention does not reflect the most novel aspects of the invention that account for such characteristics; that is, the features that allow for such unexpected results and commercial success over the current available fasteners as described in the declaration need to be properly claimed for appropriate differentiation over the prior art. As discussed in the interview (see attached interview summary form); the feature of the screw that accounts for the beneficial differences between the instant screw and those of the prior art needs to be claimed more structurally in detail, whether it be the features of the size of the first ring, the fact that the screw only has three rings, etc...In summary, try to further claim the aspect of the instant invention that has created the unexpected results and commercial success over the other commercially available fasteners, thereby creating critically for that aspect of the invention. The current listing of claims is still broad enough in nature as to be considered obvious in view of the prior art, since such statements as "said second portion having a plurality of spaced rings, the spaced rings reducing mushrooming of the composite material when the fastener is used in the composite material" only requires that the prior art have spaced rings; with said rings capable of reducing mushrooming of the composite material. Craven, for example, is prior art that does indeed possess such qualities as he discloses rings that "are capable of reducing mushrooming of the composite material."

Art Unit: 3677

***Conclusion***

**[8] THIS ACTION IS NON-FINAL**

**[9]** Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Reese whose telephone number is (571) 272-7082. The examiner can normally be reached on 7:30 am-6:00 pm Monday-Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached at (571) 272-7075. The fax number for the organization where this application or proceeding is assigned is the following: (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DCR

  
6/26/06

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